PRICE $5.00

POWER SUPPLY

INSTRUCTION MANUAL

kepco inc.®

131-38 SANFORD AVENUE • FLUSHING, N. Y. 11352
Area Code 212 IN 1-7000 • TWX # 212-539-6623

INSTRUCTION MANUAL

VOLTAGE REGULATED POWER SUPPLY

MODEL 1520B

SERIAL NO. B-33631

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FOR KEPCO MANUFACTURED EQUIPMENT

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VOLTAGE REGULATED POWER SUPPLY

PROCEDURE FOR TURNING ON THE POWER SUPPLY THE FIRST TIME

Place the B+ switch in the OFF position. Turn on the AC power switch. Allow the tube filaments to heat for ten minutes before turning on the B+ switch. This procedure is in accordance with good practice for putting mercury vapor rectifier tubes in operation. This ten minute period allows the mercury which is deposited on the elements of the rectifier to be evaporated.

NORMAL PROCEDURE FOR TURNING ON THE POWER SUPPLY

Before turning on the AC power switch, turn the DC voltage control to the extreme left and place the DC switch in the OFF position. Turn on the AC power switch. Allow 45 seconds for the time delay relay to operate. Turn the DC switch on and adjust the voltage to the desired value.

CAUTION: The top and back doors of the power supply cabinet should not be opened during normal operation of the power supply. The exposed high voltage inside the cabinet is dangerous.

TAKE NECESSARY PRECAUTIONS

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NOTE: Milliammeter -

The divider network which samples the error signal for the regulator amplifier is connected directly at the output terminals in order to compensate for the voltage drop in the milliammeter and associated wiring. Therefore, the milliammeter will indicate the current drawn by this divider network.

When it is necessary to get an accurate reading of the current drawn from the power supply, reset the 0 of the milliammeter at each output voltage before drawing the load from the output terminals.

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VOLTAGE REGULATED POWER SUPPLY

MODEL 1520B

SPECIFICATIONS:

OUTPUT VOLTAGE DC: 0-1500 volts continuously variable.

OUTPUT CURRENT DC: 0-200 milliamperes continuous duty.

REGULATION: In the range 0-1500 volts, the output voltage variation is less than 0.1 volt for load variations from 0 to maximum current, and less than ±0.2 volt for line fluctuations from ~~105-125~~ 115 ± 10 volts.

RIPPLE VOLTAGE: Less than 3 millivolts RMS.

FUSE PROTECTION: Input and output fuses on front panel. Time delay relay is included.

The negative reference supply and amplifier is separately fused. This fuse is located on the rear apron of the chassis. In the event that this fuse blows, the DC voltage will be automatically turned off.

POWER REQUIREMENTS: 105-125 volts, 50-65 cycles.

OUTPUT TERMINATIONS: High voltage DC terminals are clearly marked on the front panel. Either positive or negative terminals may be grounded. DC terminals are isolated from the chassis. A terminal is provided for connecting to the chassis. All terminals are also brought out at the rear of the unit.

METERS: Milliammeter: 0-200 milliamperes, 4" rectangular.
Voltmeter: 0-1500 volts, 4" rectangular.

PHYSICAL SPECIFICATIONS: Cabinet height 22-3/4", width 22-1/2", depth 16". Front panel width 19", height 21", color Kepco standard gray hammertone. Carrying handles are provided.

CONTROLS: Power on-off switch, high voltage on-off switch and high voltage control.

OPERATING INSTRUCTIONS: The Kepco Model 1520B Regulated Power Supply is shipped with all tubes in place and is ready for operation.

PROCEDURE FOR TURNING ON POWER SUPPLY: Turn on the AC power switch. Allow 45 seconds for the time delay relay to operate. Turn the DC switch on and adjust the voltage to the desired value.

The time delay relay in this unit is a thermal type. When the thermal time delay relay closes, an auxiliary double pole-double throw relay is activated. One half of this relay removes the heater voltage from the time delay relay. The other half of the relay closes the primary circuit of the high voltage plate transformer. In the event that the line voltage should fail momentarily, this double pole-double throw relay will be de-energized. When the line voltage is again turned on, the DC voltage will not reappear for approximately 30 seconds.

CAUTION: THE TOP AND BACK DOORS OF THE POWER SUPPLY CABINET SHOULD NOT BE OPENED DURING NORMAL OPERATION OF THE POWER SUPPLY. THE EXPOSED HIGH VOLTAGE INSIDE THE CABINET IS DANGEROUS. TAKE NECESSARY PRECAUTIONS.

PROCEDURE FOR SETTING CONTROL COUPLED TO POWERSTAT:

1. Loosen set screws on the flexible coupling on the Powerstat side.
2. Turn the Powerstat clockwise to its maximum position.
3. Turn the shaft of the coupled voltage control clockwise to its

maximum position, and then turn this shaft approximately 10 degrees counter-clockwise with the Powerstat held at its maximum position.

4. Turn on the power supply. With the Powerstat held at its maximum position rotate the coupled voltage control so that the output voltage is exactly 1500 volts. (Clockwise rotation increases the output voltage.)

5. Lock the coupling to the Powerstat shaft by tightening the set screws.

MAINTENANCE: The components of the Model 1520B Regulated Power Supply have been selected and tested to provide long and trouble-free operating life. The only service necessary should be the replacement of vacuum tubes. The location of the tubes is clearly marked on the chassis.

REPAIRS: Should any trouble develop in the instrument, it may be serviced with the aid of the schematic diagram. Major repairs, however, are usually handled by the factory.

Under no circumstances should the instrument be returned to the factory without proper authorization and shipping instructions. In any correspondence with the factory concerning repairs, the type and serial number of the instrument must be given together with a description of the trouble encountered.

PARTS LIST

DRAWING S-RAM-1500-01

C1	-	500	MMF	2000	WV
C2 and C3	-	.005	MF	600	WV
C4 and C6	-	0.1	MF	600	WV
C7	-	100	MMF	2000	WV
C8 *A, B*	-	22	MMF	2000	WV
C9 and C10	-	0.25	MF	1000	WV
C11	-	0.01	MF	2000	WV
R1	-	8.5	K	10	watt WW
R2	-	40	K	10	watt WW
R3	-	150	K	1/2	watt
R4	-	82	K	1/2	watt
R5	-	56	K	2	watt
R6 and R7	-	390	K	1/2	watt
R8	-	120	K	1/2	watt
R9 thru R12	-	560	K	1/2	watt
R13 and R14	-	270	K	1/2	watt
R15	-	27	K	1/2	watt
R16	-	10	K	10	watt WW
R17	-	40	K	10	watt WW
R18 and R19	-	270	K	1/2	watt
R20	-	82	K	1/2	watt
R21	-	50	K	10	watt WW
R22	-	15	K	10	watt WW
R23	-	560	K	1/2	watt
R24	-	82	K	1	watt
R25	-	120	K	1/2	watt
R26	-	330	K	1/2	watt
R27 and R28-	-	35	K	10	watt WW
R29 and R30	-	330	K	2	watt
R31	-	100	Ohm	1	watt
R32	-	1	Meg.	1/2	watt
R33	-	100	K	1/2	watt
R34	-	40	K	10	watt
R35 and R36	-	35	K	10	watt WW
R37	-	10	Ohm	4	watt WW

V1	-	6BQ6GTB
V2	-	6C4
V3	-	12AX7
V4	-	12AX7 or 5751
V5	-	85A2
V6	-	12AX7 or 5751
V7	-	6BA8
V8	-	7581
V9 and V10	-	NE-2

PARTS LIST - MODEL 1520B

DRAWING S-1520B-02

Power Unit

C101	-	2	MF	3000 WV
C102	-	2	MF	3000 WV
L101	-	Kepco #100-355		
L102	-	Kepco #100-356		
P101	-	Jones P-2408-SB		
R101	-	50	K	100 watt WW
T101	-	Kepco #100-354		
T102	-	Kepco #100-338		
V101	-	866A		
V102	-	866A		

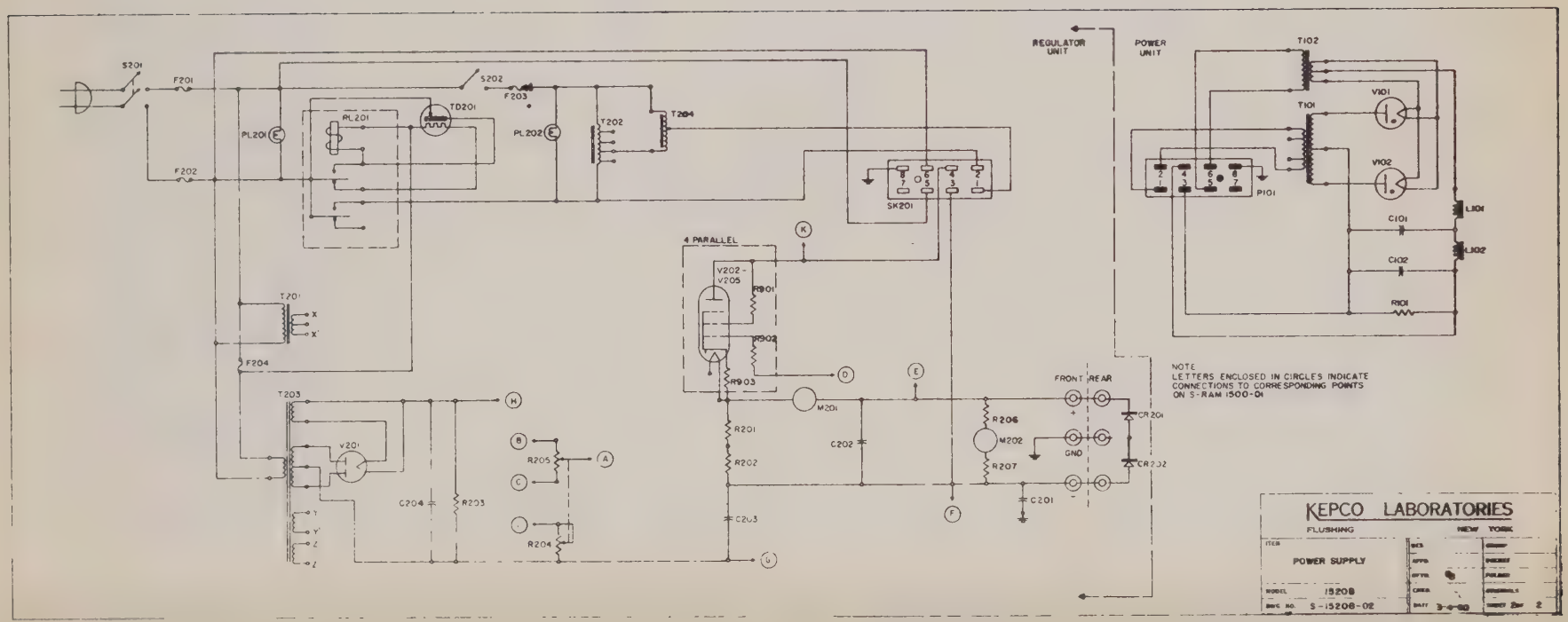
Regulator Unit

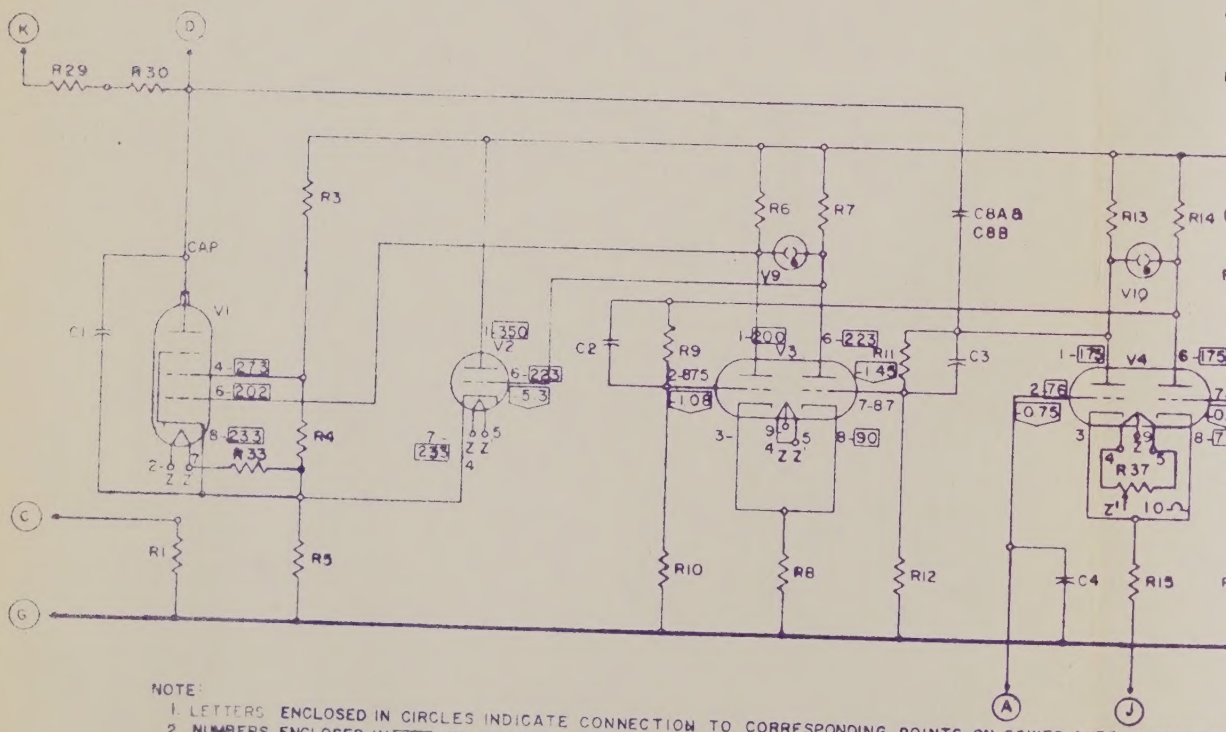
C201	-	0.25	MF	2000 WV
C202	-	4	MF	2000 WV
C203	-	4	MF	1000 WV
C204	-	4	MF	1000 WV
CR201-202	-	Silicon Rectifier CEC-1000		
F201	-	8 Amp. Fuse		
F202	-	8 Amp. Fuse		
F203	-	6 Amp. Fuse		
F204	-	0.8 Amp. Slow Blow Fuse		
M201	-	Meter, 0-200 MA DC		
M202	-	Meter, 0-1500 V DC		
PL201	-	Pilot Light Type S6		
PL202	-	Pilot Light Type S6		
R201	-	100	K	20 watt WW
R202	-	100	K	20 watt WW
R203	-	1.2	Meg.	2 watt
R204	-	50	K Dual	2 watt Pot.
R205				
R206	-	750	K	2 watt
R207	-	750	K	2 watt

PARTS LIST - MODEL 1520B

DRAWING S-1520B-02

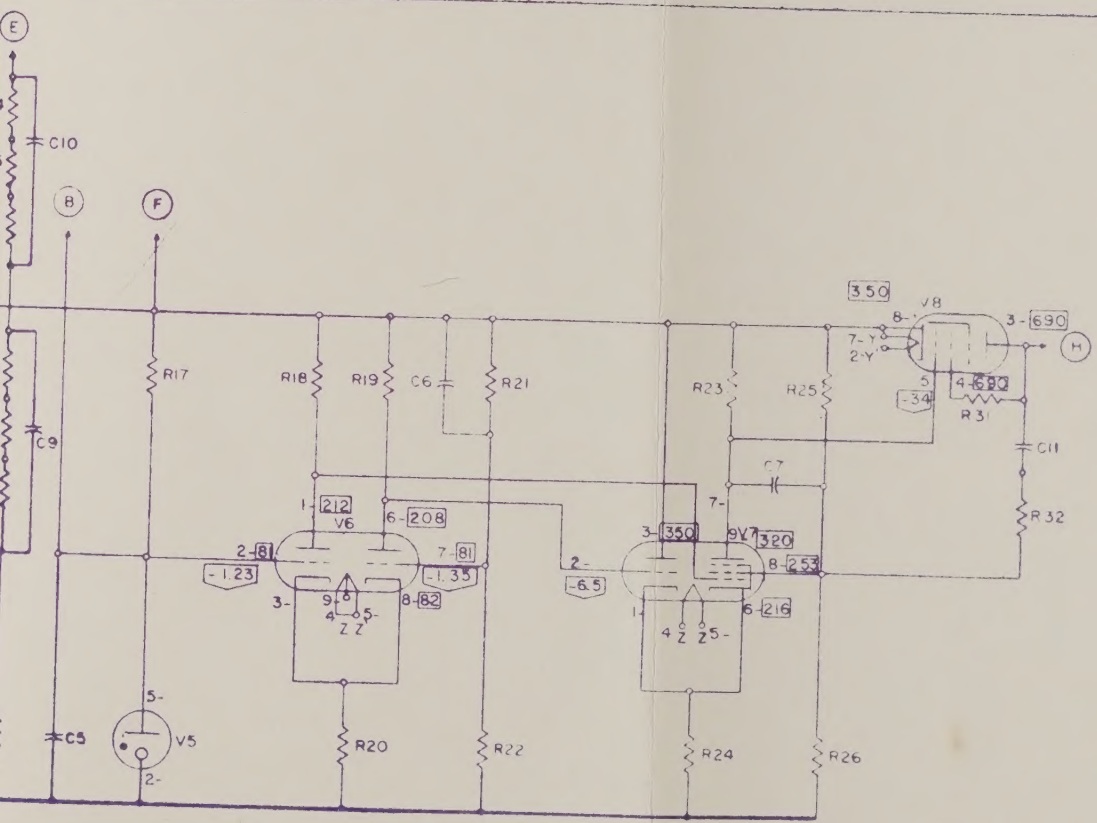
R901	- 100	Ohm	1 watt
R902	- 100	Ohm	1 watt
R903	- 47	Ohm	1 watt
RL201	- DPDT Relay		
S201	- DPST Switch		
S202	- SPST Switch		
SK201	- Jones S-2408-SB		
T201	- Kepco #100-294		
T202	- Kepco #100-802		
T203	- Kepco #100-664		
T204	- Superior Type 116U Powerstat		
TD201	- 117-30-GO or 115 NO 30T		
V201	- 5U4GB		
V202 thru V205	- 7581		


REGULATOR UNIT
POWER UNIT
S201
F201
F202
S202
F203
PL201
PL202
TD201
RL201
T202
T204
SK201
T101
T102
V101
V102
P101
L101
L102
C101
C102
R101
4 PARALLEL
V202 - V205
R901
R902
R903
T201
F204
T203
V201
R201
R202
R203
R204
R205
C202
C203
C204
M201
R206
M202
R207
C201
FRONT
REAR
GND
CR201
CR202
NOTE
LETTERS ENCLOSED IN CIRCLES INDICATE CONNECTIONS TO CORRESPONDING POINTS ON S-RAM 1500-01
KEPCO LABORATORIES
FLUSHING
NEW YORK
POWER SUPPLY
MODEL 1520B
DWG NO. S-1520B-02
DATE 3-6-60



NOTE:

1. LETTERS ENCLOSED IN CIRCLES INDICATE CONNECTION TO CORRESPONDING POINTS ON POWER SUPPLY DRAWING
2. NUMBERS ENCLOSED IN ▭ ARE MEASURED TO THE MINUS REF. BUSS.
3. NUMBERS ENCLOSED IN ▽ ARE MEASURED FROM GRID TO CATHODE OF EACH STAGE.
4. NUMBERS ENCLOSED IN △ ARE MEASURED TO POSITIVE OUTPUT TERMINAL.
5. ALL MEASUREMENT TAKEN WITH V T V M WITH MEGOHM INPUT IMPEDANCE.
   (A) SET TO MAXIMUM RATED OUTPUT VOLTAGE -0 LOAD.
   (B) INPUT VOLTAGE 115 VAC.
6. INDICATED VOLTAGES ARE SUBJECT TO NORMAL COMPONENT TOLERANCE



KEPCO LABORATORIES		
FLUSHING, NEW YORK		
ITEM: REGULATOR AMPLIFIER	DES	GROUP
	APPD	PORTED
	DRWN BB	FOLDED
MODEL: RAM 1500	CHKD KK	ORIGINALS
DRG NO: S-RAM 1500-01	DATE: 7-10-62	SHEET 1 OF 2

131-38 SANFORD AVENUE • FLUSHING, N.Y. 11352 • Phone (212) IN 1-7000
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